

Library technicians in school libraries work regular school hours. Those in public libraries and college and university (academic) libraries also work weekends, evenings and some holidays. Library technicians in special libraries usually work normal business hours, although they often work overtime as well.

Library technicians usually work under the supervision of a librarian, although they work independently in certain situations.

### Employment

Library technicians held about 72,000 jobs in 1998. Most worked in school, academic, or public libraries. Some worked in hospitals and religious organizations. The Federal Government, primarily the Department of Defense and the Library of Congress, and State and local governments also employed library technicians.

### Training, Other Qualifications, and Advancement

Training requirements for library technicians vary widely, ranging from a high school diploma to specialized postsecondary training. Some employers hire individuals with work experience or other training; others train inexperienced workers on the job. Other employers require that technicians have an associate or bachelor's degree. Given the rapid spread of automation in libraries, computer skills are needed for many jobs. Knowledge of databases, library automation systems, on-line library systems, on-line public access systems, and circulation systems is valuable.

Some 2-year colleges offer an associate of arts degree in library technology. Programs include both liberal arts and library-related study. Students learn about library and media organization and operation, and how to order, process, catalogue, locate, and circulate library materials and work with library automation. Libraries and associations offer continuing education courses to keep technicians abreast of new developments in the field.

Library technicians usually advance by assuming added responsibilities. For example, technicians often start at the circulation desk, checking books in and out. After gaining experience, they may become responsible for storing and verifying information. As they advance, they may become involved in budget and personnel matters in their department. Some library technicians advance to supervisory positions and are in charge of the day-to-day operation of their department.

### Job Outlook

Employment of library technicians is expected to grow about as fast as the average for all occupations through 2008. Some job openings will result from the need to replace library technicians who transfer to other fields or leave the labor force. Similar to other fields, willingness to relocate enhances an aspiring library technician's job prospects.

The increasing use of library automation is expected to spur job growth among library technicians. Computerized information systems have simplified certain tasks, such as descriptive cataloguing, which can now be handled by technicians instead of librarians. For instance, technicians can now easily retrieve information from a central database and store it in the library's computer. Although budgetary constraints could dampen employment growth of library technicians in school, public, and college and university libraries, libraries sometimes use technicians to perform some librarian duties in an effort to stretch shrinking budgets. Growth in the number of professionals and other workers who use special libraries should result in relatively fast employment growth among library technicians in those settings.

### Earnings

Median annual earnings of library technicians in 1998 were \$21,730. The middle 50 percent earned between \$16,500 and \$27,340. The lowest 10 percent earned less than \$12,610 and the highest 10 percent earned more than \$33,370. Median annual earnings in the

industries employing the largest numbers of library technicians in 1997 are shown below:

Local government, except education and hospitals .....	\$22,200
Colleges and universities .....	21,400
Elementary and secondary schools .....	18,300

Salaries of library technicians in the Federal Government averaged \$29,700 in 1999.

### Related Occupations

Library technicians perform organizational and administrative duties. Workers in other occupations with similar duties include library assistants, information clerks, record clerks, medical record technicians, and title searchers.

### Sources of Additional Information

Information about a career as a library technician can be obtained from:

☛ Council on Library/Media Technology, P.O. Box 951, Oxon Hill, MD 20750. Internet: <http://library.ucr.edu/COLT>

For information on training programs for library/media technical assistants, write to:

☛ American Library Association, Office for Human Resource Development and Recruitment, 50 East Huron St., Chicago, IL 60611. Internet: <http://www.ala.org>

Information on acquiring a job as a library technician with the Federal Government may be obtained from the Office of Personnel Management through a telephone-based system. Consult your telephone directory under U.S. Government for a local number or call (912) 757-3000; TDD (912) 744-2299. That number is not toll free and charges may result. Information also is available from their Internet site: <http://www.usajobs.opm.gov>

Information concerning requirements and application procedures for positions in the Library of Congress can be obtained directly from:

☛ Human Resources Office, Library of Congress, 101 Independence Ave. SE., Washington, DC 20540-2231.

State library agencies can furnish information on requirements for technicians, and general information about career prospects in the State. Several of these agencies maintain job hotlines reporting openings for library technicians.

State departments of education can furnish information on requirements and job opportunities for school library technicians.

## School Teachers—Kindergarten, Elementary, and Secondary

(O\*NET 31304, 31305, and 31308)

### Significant Points

- Public school teachers must have at least a bachelor's degree, complete an approved teacher education program, and be licensed.
- Many States offer alternative licensing programs to attract people into teaching, especially for hard-to-fill positions.
- Employment growth for secondary school teachers will be more rapid than for kindergarten and elementary school teachers due to student enrollments, but job outlook will vary by geographic area and subject specialty.

### Nature of the Work

Teachers act as facilitators or coaches, using interactive discussions and "hands-on" learning to help students learn and apply concepts

in subjects such as science, mathematics, or English. As teachers move away from the traditional repetitive drill approaches and rote memorization, they are using more “props” or “manipulatives” to help children understand abstract concepts, solve problems, and develop critical thought processes. For example, they teach the concepts of numbers or adding and subtracting by playing board games. As children get older, they use more sophisticated materials such as science apparatus, cameras, or computers.

Many classes are becoming less structured, with students working in groups to discuss and solve problems together. Preparing students for the future workforce is the major stimulus generating the changes in education. To be prepared, students must be able to interact with others, adapt to new technology, and logically think through problems. Teachers provide the tools and environment for their students to develop these skills.

Kindergarten and elementary school teachers play a vital role in the development of children. What children learn and experience during their early years can shape their views of themselves and the world, and affect later success or failure in school, work, and their personal lives. Kindergarten and elementary school teachers introduce children to numbers, language, science, and social studies. They use games, music, artwork, films, slides, computers, and other tools to teach basic skills.

Most elementary school teachers instruct one class of children in several subjects. In some schools, two or more teachers work as a team and are jointly responsible for a group of students in at least one subject. In other schools, a teacher may teach one special subject—usually music, art, reading, science, arithmetic, or physical education—to a number of classes. A small but growing number of teachers instruct multilevel classrooms, with students at several different learning levels.

Secondary school teachers help students delve more deeply into subjects introduced in elementary school and expose them to more information about the world. Secondary school teachers specialize in a specific subject, such as English, Spanish, mathematics, history, or biology. They teach a variety of related courses—for example, American history, contemporary American problems, and world geography.

Special education teachers—who instruct elementary and secondary school students who have a variety of disabilities—are discussed separately in this section of the *Handbook*.

Teachers may use films, slides, overhead projectors, and the latest technology in teaching, including computers, telecommunication systems, and video discs. Use of computer resources, such as educational software and the Internet, exposes students to a vast range of experiences and promotes interactive learning. Through the Internet, American students can communicate with students in other countries. Students also use the Internet for individual research projects and information gathering. Computers are used in other classroom activities as well, from helping students solve math problems to learning English as a second language. Teachers may also use computers to record grades and perform other administrative and clerical duties. They must continually update their skills so they can instruct and use the latest technology in the classroom.

Teachers often work with students from varied ethnic, racial, and religious backgrounds. With growing minority populations in many parts of the country, it is important for teachers to establish rapport with a diverse student population. Accordingly, some schools offer training to help teachers enhance their awareness and understanding of different cultures. Teachers may also include multicultural programming in their lesson plans to address the needs of all students, regardless of their cultural background.

Teachers design classroom presentations to meet student needs and abilities. They also work with students individually. Teachers plan, evaluate, and assign lessons; prepare, administer, and grade tests; listen to oral presentations; and maintain classroom discipline. They observe and evaluate a student’s performance and potential,



*School teachers make classroom presentations and provide individual instruction.*

and increasingly are asked to use new assessment methods. For example, teachers may examine a portfolio of a student’s artwork or writing to judge the student’s overall progress. They then can provide additional assistance in areas where a student needs help. Teachers also grade papers, prepare report cards, and meet with parents and school staff to discuss a student’s academic progress or personal problems.

In addition to classroom activities, teachers oversee study halls and homerooms and supervise extracurricular activities. They identify physical or mental problems and refer students to the proper resource or agency for diagnosis and treatment. Secondary school teachers occasionally assist students in choosing courses, colleges, and careers. Teachers also participate in education conferences and workshops.

In recent years, site-based management, which allows teachers and parents to participate actively in management decisions, has gained popularity. In many schools, teachers are increasingly involved in making decisions regarding the budget, personnel, textbook choices, curriculum design, and teaching methods.

### **Working Conditions**

Seeing students develop new skills and gain an appreciation of knowledge and learning can be very rewarding. However, teaching may be frustrating when dealing with unmotivated and disrespectful students. Occasionally, teachers must cope with unruly behavior and violence in the schools. Teachers may experience stress when dealing with large classes, students from disadvantaged or multicultural backgrounds, and heavy workloads.

Teachers are sometimes isolated from their colleagues because they work alone in a classroom of students. However, some schools are allowing teachers to work in teams and with mentors to enhance their professional development.

Including school duties performed outside the classroom, many teachers work more than 40 hours a week. Most teachers work the traditional 10-month school year with a 2-month vacation during the summer. Those on the 10-month schedule may teach in summer sessions, take other jobs, travel, or pursue other personal interests. Many enroll in college courses or workshops to continue their education. Teachers in districts with a year-round schedule typically work 8 weeks, are on vacation for 1 week, and have a 5-week mid-winter break.

Most States have tenure laws that prevent teachers from being fired without just cause and due process. Teachers may obtain tenure after they have satisfactorily completed a probationary period of teaching, normally 3 years. Tenure does not absolutely guarantee a job, but it does provide some security.

## Employment

Teachers held about 3.4 million jobs in 1998. Of those, about 1.9 million were kindergarten and elementary school teachers, and 1.4 million were secondary school teachers. Employment is distributed geographically, much the same as the population.

## Training, Other Qualifications, and Advancement

All 50 States and the District of Columbia require public school teachers to be licensed. Licensure is not required for teachers in private schools. Usually licensure is granted by the State board of education or a licensure advisory committee. Teachers may be licensed to teach the early childhood grades (usually nursery school through grade 3); the elementary grades (grades 1 through 6 or 8); the middle grades (grades 5 through 8); a secondary education subject area (usually grades 7 through 12); or a special subject, such as reading or music (usually grades K through 12).

Requirements for regular licenses vary by State. However, all States require a bachelor's degree and completion of an approved teacher training program with a prescribed number of subject and education credits as well as supervised practice teaching. About one-third of the States also require technology training as part of the teacher certification process. A number of States require specific minimum grade point averages for teacher licensure. Other States require teachers to obtain a master's degree in education, which involves at least 1 year of additional coursework beyond the bachelor's degree with a specialization in a particular subject.

Almost all States require applicants for teacher licensure to be tested for competency in basic skills such as reading, writing, teaching, and subject matter proficiency. Most States require continuing education for renewal of the teacher's license. Many States have reciprocity agreements that make it easier for teachers licensed in one State to become licensed in another.

Increasingly, many States are moving towards implementing performance-based standards for licensure, which require passing a rigorous comprehensive teaching examination to obtain a provisional license. Teachers must then demonstrate satisfactory teaching performance over an extended period of time to obtain a full license.

Many States offer alternative teacher licensure programs for people who have bachelor's degrees in the subject they will teach, but lack the necessary education courses required for a regular license. Alternative licensure programs were originally designed to ease teacher shortages in certain subjects, such as mathematics and science. The programs have expanded to attract other people into teaching, including recent college graduates and mid-career changers. In some programs, individuals begin teaching quickly under provisional licensure. After working under the close supervision of experienced educators for 1 or 2 years while taking education courses outside school hours, they receive regular licensure if they have progressed satisfactorily. Under other programs, college graduates who do not meet licensure requirements take only those courses that they lack, and then become licensed. This may take 1 or 2 semesters of full-time study. States may issue emergency licenses to individuals who do not meet requirements for a regular license when schools cannot attract enough qualified teachers to fill positions. Teachers who need licensure may enter programs that grant a master's degree in education, as well as a license.

For several years, the National Board for Professional Teaching Standards has offered voluntary national certification for teachers. To become nationally certified, teachers must prove their aptitude by compiling a portfolio showing their work in the classroom, and by passing a written assessment and evaluation of their teaching knowledge. Currently, teachers may become certified in one of seven areas. These areas are based on the age of the students and, in some cases, subject area. For example, teachers may obtain a certificate for teaching English Language Arts to early adolescents (ages 11-15), or they may become certified as early childhood generalists. All States recognize national certification, and many States and

school districts provide special benefits to teachers holding national certification. Benefits typically include higher salaries and reimbursement for continuing education and certification fees. Additionally, many States allow nationally certified teachers to carry a license from one State to another.

The National Council for Accreditation of Teacher Education currently accredits over 500 teacher education programs across the United States. Generally, 4-year colleges require students to wait until their sophomore year before applying for admission to teacher education programs. Traditional education programs for kindergarten and elementary school teachers include courses—designed specifically for those preparing to teach—in mathematics, physical science, social science, music, art, and literature, as well as prescribed professional education courses such as philosophy of education, psychology of learning, and teaching methods. Aspiring secondary school teachers either major in the subject they plan to teach while also taking education courses, or major in education and take subject courses. Teacher education programs are now required to include classes in the use of computers and other technologies to maintain accreditation. Most programs require students to perform a student teaching internship.

Many States now offer professional development schools, which are partnerships between universities and elementary or secondary schools. Students enter these 1-year programs after completion of their bachelor's degree. Professional development schools merge theory with practice and allow the student to experience a year of teaching first-hand, with professional guidance.

In addition to being knowledgeable in their subject, the ability to communicate, inspire trust and confidence, and motivate students, as well as to understand their educational and emotional needs, is essential for teachers. Teachers must be able to recognize and respond to individual differences in students, and employ different teaching methods that will result in higher student achievement. They also should be organized, dependable, patient, and creative. Teachers must also be able to work cooperatively and communicate effectively with other teaching staff, support staff, parents, and other members of the community.

With additional preparation, teachers may move into positions as school librarians, reading specialists, curriculum specialists, or guidance counselors. Teachers may become administrators or supervisors, although the number of these positions is limited and competition can be intense. In some systems, highly qualified, experienced teachers can become senior or mentor teachers, with higher pay and additional responsibilities. They guide and assist less experienced teachers while keeping most of their own teaching responsibilities.

## Job Outlook

The job market for teachers varies widely by geographic area and by subject specialty. Many inner cities—often characterized by overcrowded conditions and higher than average crime and poverty rates—and rural areas—characterized by their remote location and relatively low salaries—have difficulty attracting enough teachers, so job prospects should continue to be better in these areas than in suburban districts. Currently, many school districts have difficulty hiring qualified teachers in some subjects—mathematics, science (especially chemistry and physics), bilingual education, and computer science. Specialties that currently have an abundance of qualified teachers include general elementary education, physical education, and social studies. Teachers who are geographically mobile and who obtain licensure in more than one subject should have a distinct advantage in finding a job. With enrollments of minorities increasing, coupled with a shortage of minority teachers, efforts to recruit minority teachers should intensify. Also, the number of non-English speaking students has grown dramatically, especially in California and Florida which have large Spanish-speaking student populations, creating demand for bilingual teachers and those who teach English as a second language.

Overall employment of kindergarten, elementary, and secondary school teachers is expected to increase about as fast as the average for all occupations through the year 2008. The expected retirement of a large number of teachers currently in their 40s and 50s should open up many additional jobs. However, projected employment growth varies among individual teaching occupations.

Employment of secondary school teachers is expected to grow faster than the average for all occupations through the year 2008, while average employment growth is projected for kindergarten and elementary school teachers. Assuming relatively little change in average class size, employment growth of teachers depends on population growth rates and corresponding student enrollments. Enrollments of secondary school students are expected to grow throughout most of the projection period. (See chart 1.) On the other hand, elementary school enrollment is projected to increase until the year 2001, and then decline. (See chart 2.)

The number of teachers employed is also dependent on State and local expenditures for education. Pressures from taxpayers to limit spending could result in fewer teachers than projected; pressures to spend more to improve the quality of education could increase the teacher workforce.

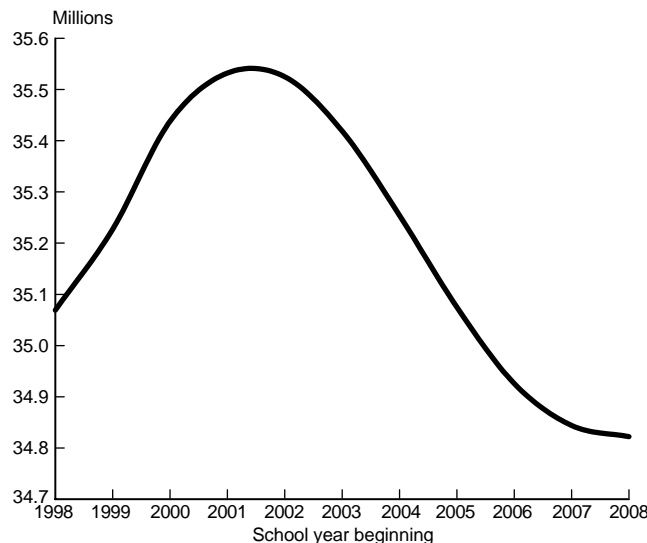
In anticipation of growing student enrollments at the secondary school level, many States are implementing policies that will encourage more students to become teachers. Some are giving large signing bonuses that are distributed over the teacher's first few years of teaching. Some are expanding State scholarships; issuing loans for moving expenses; and implementing loan-forgiveness programs, allowing education majors with at least a B average to receive State-paid tuition as long as they agree to teach in the State for 4 years.

The supply of teachers also is expected to increase in response to reports of improved job prospects, more teacher involvement in school policy, and greater public interest in education. In recent years, the total number of bachelor's and master's degrees granted in education has steadily increased. In addition, more teachers will be drawn from a reserve pool of career changers, substitute teachers, and teachers completing alternative certification programs, relocating to different schools, and reentering the workforce.

### Earnings

Median annual earnings of kindergarten, elementary, and secondary school teachers ranged from \$33,590 to \$37,890 in 1998; the

**Chart 2. Elementary school enrollments are expected to increase through the year 2001, then decrease.**



Source: National Center for Education Statistics

lowest 10 percent, \$19,710 to \$24,390; the top 10 percent, \$53,720 to \$70,030.

According to the American Federation of Teachers, beginning teachers with a bachelor's degree earned an average of \$25,700 in the 1997-98 school year. The estimated average salary of all public elementary and secondary school teachers in the 1997-98 school year was \$39,300. Private school teachers generally earn less than public school teachers.

In 1998, over half of all public school teachers belonged to unions—mainly the American Federation of Teachers and the National Education Association—that bargain with school systems over wages, hours, and the terms and conditions of employment.

In some schools, teachers receive extra pay for coaching sports and working with students in extracurricular activities. Some teachers earn extra income during the summer working in the school system or in other jobs.

### Related Occupations

Kindergarten, elementary, and secondary school teaching requires a variety of skills and aptitudes, including a talent for working with children; organizational, administrative, and recordkeeping abilities; research and communication skills; the power to influence, motivate, and train others; patience; and creativity. Workers in other occupations requiring some of these aptitudes include college and university faculty, counselors, education administrators, employment interviewers, librarians, preschool teachers and child-care workers, public relations specialists, sales representatives, social workers, and trainers and employee development specialists.

### Sources of Additional Information

Information on licensure or certification requirements and approved teacher training institutions is available from local school systems and State departments of education.

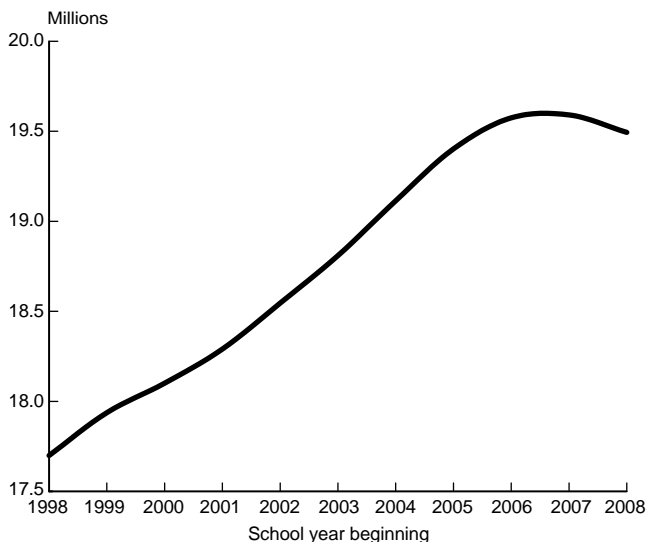
Information on teachers' unions and education-related issues may be obtained from:

- ☛ American Federation of Teachers, 555 New Jersey Ave. NW, Washington, DC 20001.
- ☛ National Education Association, 1201 16th St. NW, Washington, DC 20036.

A list of institutions with accredited teacher education programs can be obtained from:

- ☛ National Council for Accreditation of Teacher Education, 2010 Massachusetts Ave. NW., Suite 500, Washington, DC 20036.
- Internet: <http://www.ncate.org>

**Chart 1. Secondary school enrollments are expected to increase through the year 2007.**



Source: National Center for Education Statistics

For information on national teacher certification, contact:

☛ National Board for Professional Teaching Standards, 26555 Evergreen Rd., Suite 400, Southfield, MI 48076. Internet: <http://www.nbpts.org>

For information on alternative certification programs, contact:

☛ ERIC Clearinghouse on Teacher Education, 1307 New York Ave. NW, Washington, DC 20005-4701.

## Special Education Teachers

(O\*NET 31311A, 31311B, and 31311C)

### Significant Points

- A bachelor's degree, completion of an approved teacher preparation program, and a license are required to qualify; many States require a master's degree.
- Many States offer alternative licensure programs to attract people into these jobs.
- Job openings arising from rapid employment growth and some job turnover mean excellent job prospects; many school districts report shortages of qualified teachers.

### Nature of the Work

Special education teachers work with children and youths who have a variety of disabilities. Most special education teachers instruct students at the elementary, middle, and secondary school level, although some teachers work with infants and toddlers. Special education teachers design and modify instruction to meet a student's special needs. Teachers also work with students who have other special instructional needs, including the gifted and talented.

The various types of disabilities delineated in Federal legislation concerning special education programs include specific learning disabilities, speech or language impairments, mental retardation, emotional disturbance, multiple disabilities, hearing impairments, orthopedic impairments, other health impairments, visual impairments, autism, deaf-blindness, and traumatic brain injury. Students are classified under one of the categories, and special education teachers are prepared to work with specific groups.

Special education teachers use various techniques to promote learning. Depending on the disability, teaching methods can include individualized instruction, problem-solving assignments, and group or individual work. Special education teachers are legally required to help develop an Individualized Education Program (IEP) for each special education student. The IEP sets personalized goals for each student and is tailored to a student's individual learning style and ability. This program includes a transition plan outlining specific steps to prepare special education students for middle school or high school, or in the case of older students, a job or postsecondary study. Teachers review the IEP with the student's parents, school administrators, and often the student's general education teacher. Teachers work closely with parents to inform them of their child's progress and suggest techniques to promote learning at home.

Teachers design curricula, assign work geared toward each student's ability, and grade papers and homework assignments. Special education teachers are involved in a student's behavioral as well as academic development. They help special education students develop emotionally, be comfortable in social situations, and be aware of socially acceptable behavior. Preparing special education students for daily life after graduation is an important aspect of the job. Teachers help students learn routine skills, such as balancing a checkbook, or provide them with career counseling.

As schools become more inclusive, special education teachers and general education teachers increasingly work together in



*Special education teachers design and modify instruction to meet students' special needs.*

general education classrooms. Special education teachers help general educators adapt curriculum materials and teaching techniques to meet the needs of disabled students. They coordinate the work of teachers, teacher assistants, and themselves to meet the requirements of inclusive special education programs, in addition to teaching special education students. A large part of a special education teacher's job involves interacting with others. They communicate frequently with parents, social workers, school psychologists, occupational and physical therapists, school administrators, and other teachers.

Special education teachers work in a variety of settings. Some have their own classrooms and teach only special education students; others work as special education resource teachers and offer individualized help to students in general education classrooms; and others teach with general education teachers in classes composed of both general and special education students. Some teachers work in a resource room, where special education students work several hours a day, separate from their general education classroom. A significantly smaller proportion of special education teachers works in residential facilities or tutor students in homebound or hospital environments.

Early identification of a child with special needs is another important part of a special education teacher's job. Early intervention is essential in educating these children. Special education teachers who work with infants usually travel to the child's home to work with the child and his or her parents.

Technology is playing an increasingly important role in special education. Special education teachers use specialized equipment such as computers with synthesized speech, interactive educational software programs, and audiotapes.

### Working Conditions

Special education teachers enjoy the challenge of working with these students and the opportunity to establish meaningful relationships. Although helping students with disabilities can be highly rewarding, the work can also be emotionally and physically draining. Special education teachers are under considerable stress due to heavy workloads and tedious administrative tasks. They must produce a substantial amount of paperwork documenting each student's progress. Exacerbating this stress is the threat of litigation by students' parents if correct procedures are not followed, or if the parent feels their child is not receiving an adequate education. The physical and emotional demands of the job cause some special education teachers to leave the occupation.

Many schools offer year-round education for special education students, but most special education teachers work the traditional 10-month school year.